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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,616	04/25/2005	Peter Edward James Abbott	JMYS-125US	4752

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RATNERPRESTIA
P O BOX 980
VALLEY FORGE, PA 19482-0980

EXAMINER	
NGUYEN, HUY TRAM	
ART UNIT	PAPER NUMBER
1709	
MAIL DATE	DELIVERY MODE
09/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,616	ABBOTT, PETER EDWARD JAMES	
	Examiner	Art Unit	
	Huy-Tram Nguyen	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *April 25, 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hearn et al. (US Patent No. 5,595,634) in view of Wismann et al. (US 2002/0130062 A1).**

Regarding Claim 1, Hearn et al. reference discloses a process for the separation of a stream containing propane and/or butanes **(Column 9, Line 7-10)** from a hydrocarbon feedstock contaminated with alkyl mercaptans **(Column 1, Line 20-31)** by fractional distillation **(Column 6, Line 17 – distillation column reactor)** at such a

pressure that a separated overheads stream containing said propane and/or butanes is at a temperature in the range 50 to 100°C (Column 6, Line 20-21 – 100°F to 300°F), and a column including at least one bed of a catalyst capable **(Column 8, Line 49-50 – lower catalyst bed (20))**, under the prevailing conditions, of oxidising mercaptans to higher boiling point sulphur compounds **(Column 8, Line 59-61),** and separating the higher boiling point sulphur compounds as part of a liquid phase from the distillation **(Column 8, Line 61-63). However, in the process of Hearn et al. discloses a hydrogen stream to be used instead of the oxygen as the claimed invention**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use oxygen containing gas or oxygen in Hearn et al. process since it was known in the art that oxygen could be used to convert effectively a mercaptan to a disulfide **(Wismann et al. – Page 1, Para. [0009], Line 3-4).**

Regarding Claim 2, Hearn et al. and Wismann et al. references disclose the process according to claim 1 wherein the catalyst comprises a granular material containing a transition metal on a support **(Hearn et al. - Column 5, Line 27-28).**

Regarding Claim 3, Hearn et al. and Wismann et al. references disclose the process according to claim 2 wherein the transition metal comprises copper, manganese or cobalt or a mixture of two or more of these **(Column 5, Line 24-26 – Group VIII – Cobalt and Group IB – Copper).**

Regarding Claim 5, Hearn et al. and Wismann et al. references disclose the process according to claim 1 wherein the amount of mercaptans present in the

hydrocarbon feedstock is less than 2000 ppm volume **(Hearn et al. - Column 2, Line 43-44 – concentration of up to hundreds wppm).**

Regarding Claim 6, Hearn et al. and Wismann et al. references disclose the process according to claim 1wherein the distillation is effected at a pressure in the range 5 to 25 bar abs **(Hearn et al. and Wismann et al. - Column 6, Line 18 – the range between 0 and 250 psig).**

Regarding Claim 7, Hearn et al. and Wismann et al. references disclose the process according to claim 1 wherein the oxygen is supplied by dissolving air in the hydrocarbon feedstock **(Wismann et al. – Page 1, Para. [0009], Line 21).**

Regarding Claim 8, Hearn et al. and Wismann et al. references disclose the process according to claim 1 except for the limitation wherein water is incorporated into the hydrocarbon feed in such an amount that it is miscible with the hydrocarbon stream under the prevailing conditions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to introduce the water into hydrocarbon feed in such an amount that it is miscible with the hydrocarbon stream, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson, 136 USPQ* 184.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hearn et al. (US Patent No. 5,595,634) in view of Wismann et al. (US 2002/0130062 A1) and Hayes (US Patent No. 3,839,192)**

Regarding Claim 4, Hearn et al. and Wismann et al. references disclose the process according to claim 3 except for the granular material comprising copper sulphates, sodium chloride and water on a clay support. Hayes reference discloses catalyst composites comprising transition metal sulfates, sodium chloride and water **(Column 1, Line 40 – transition metals, Column 5, Line 14 – clay support, Column 6, Line 50 -- Sodium Chloride and Column 9, 25 – water)**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the catalyst prepared by Hayes since it was known in the art that such composites could be used as a catalyst in many industries such as petroleum and petrochemical industry for hydrogenation-dehydrogenation processes and cracking processes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy-Tram Nguyen whose telephone number is 571-270-3167. The examiner can normally be reached on M - F : 7:30 AM - 5:00 PM (Alternated Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
8/14/07

Walter D. Griffin
WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER